

Hybrid Deicing System And Method Of Operation

Related Application

This application claims the benefit of and priority to earlier filed US provisional application for a Glycol Air Deicing System serial number 60/022,508 filed June 17, 1996.

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Field of invention

This invention is related to system for deicing aircraft and more particularly to a glycol/air coaxial stream deicing system wherein glycol and forced air are applied as a specially formed glycol stream within a forced air stream. The special stream is charged to hydronamically dislodge and remove ice or other frozen deposits from the aircraft.

Background

Prior forced air deicing systems inject the glycol in an air stream air causing the glycol to atomized and dispersed in the air. Such streams lack the cleaning capacity to dislodge and remove ice from aircraft wings.

Conventional aircraft deicing systems consist of ground or truck mounted spray systems which apply hot (180°F) deicing fluid (a mixture of glycol and water) at rates up to 60 gpm to the aircraft surfaces. This thermal process is very effective in quickly melting the snow or ice from these surfaces, i.e. wings, etc. However, glycol is expensive and toxic creating significant economic and waste management problems for airline and airport operators. The life cycle cost of deicing glycol (i.e. Type I ethylene or propylene glycol) includes costs associated with its buying, storing, handling, heating, applying, collecting and reprocessing or disposal. Various deicing systems using little or no glycol have been tried and to date these systems have demonstrated limited effectiveness. Therefore, they have not gained acceptance by commercial deicing operators.